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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/712,452	11/12/2003	Chang-Woo Ha	4611-030	9296

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EXAMINER

LAM, TUAN THIEU

ART UNIT PAPER NUMBER

2816

DATE MAILED: 08/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/712,452

Applicant(s)

HA ET AL.

Examiner

Tuan T. Lam

Art Unit

2816

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 August 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 and 22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-5,11,19 and 22 is/are rejected.
- 7) ☒ Claim(s) 2,6-10 and 12-18 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This is a response to the amendment filed 8/4/2005. Claims 1-19 and 22 are pending. The finality of the previous Office action has been withdrawn in view of new grounds of rejection.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 3-5, 11, 19 and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Khorramabadi et al. (USP 5,532,471). Figure 1 shows a current to voltage transforming circuit comprising a photo detector (100), an amplifier (102-104), an emitter follower (107, 108), an output buffer (109-112), a current detecting limiter unit (115, 116, 117, 118, 105, 106) having an input terminal and an output terminal to output a limiter current when an output current of the amplifier is greater than a predetermined reference value (when output of the amplifier, the voltage at the junction of resistor 103 and transistor 102, is greater than the predetermined reference value (the base-emitter voltage of the transistor 107) all transistors 107, 109 and 111 are on, thus activates the current detecting limiter outputting a limiter current), a feedback resistor (120) coupled between the input of said amplifier and the output of the output buffer as called for in claims 1 and 19.

Regarding claim 3, the input terminal of the current detecting limiter unit is coupled to an output terminal of the output buffer.

Regarding claims 4 and 22, the output terminal of the current detecting limiter unit is coupled to an input of the amplifier.

Regarding claim 5, the output of the current detecting limiter is coupled to ground via the capacitor 117.

Regarding claim 11, the output terminal of the current detecting limiter unit comprising a first and second sub-output terminals coupled to the amplifier via the gain 118 and to ground via the capacitor 117, respectively.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 3-5, 11, 19 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kimura (USP 6,384,689). Figure 4 of Kimura shows a current to voltage transforming circuit comprising a photo detector (not shown at a terminal IN), an amplifier (3), a source follower (M1, 10, 7), an output buffer (M2, 8, 9), a current detecting limiter unit (11) having an input terminal and an output terminal to output a limiter current when an output current of the amplifier is greater than a predetermined reference value (when output of the amplifier, the voltage at the out terminal of the amplifier 3, is greater than the predetermined reference value (gate-source voltage of the transistor 11, the current detecting limiter outputting a limiter current), a feedback resistor (4) coupled between the input of said amplifier and the output of the output buffer.

The difference seen between Kimura reference and the present invention is that Kimura shows a source follower circuit, e.g., FET technology, instead of an emitter follower circuit, e.g. bipolar technology, as called for in claims 1 and 19. However, it is notoriously well known in the art that bipolar technology provides a faster speed than FET technology. Therefore, it would have been obvious to a person skilled in the art at the time the invention was made to replace Kimura's FET technology with bipolar technology for the purpose of increasing the speed of the circuit.

Regarding claim 3, the input terminal of the current detecting limiter unit is coupled to an output terminal of the output buffer.

Regarding claims 4 and 22, the output terminal of the current detecting limiter unit is coupled to an input of the amplifier.

Regarding claim 5, the output of the current detecting limiter is coupled to ground.

Regarding claim 11, the output terminal of the current detecting limiter unit comprising a first and second sub-output terminals coupled to the amplifier via the transistor 11 and to ground via the transistor 12, respectively.

Allowable Subject Matter

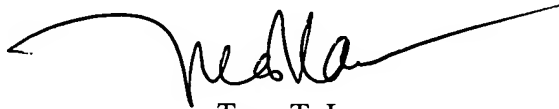
5. Claims 2, 6-10 and 12-18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan T. Lam whose telephone number is 571-272-1744. The examiner can normally be reached on Monday to Friday (7:30 am to 6:00pm).

Art Unit: 2816

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, TIMOTHY P. CALLAHAN can be reached on 571-272-1740. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Tuan T. Lam', with a long horizontal stroke extending to the right.

Tuan T. Lam
Primary Examiner
Art Unit 2816

8/15/2005